

CLAIMS

- 1 An optical device comprising a radiation source (101) for producing a radiation beam
and means (103, 106) for focusing the radiation beam on an information carrier (100) along
5 an optical path, said radiation beam having a central axis and an outer envelope, said
radiation beam having an intensity distribution, the optical device further comprising, in the
optical path, an optical component (104) designed for increasing the ratio between the
intensity near the envelope and the intensity near the central axis in that at least the radiation
beam near the central axis is diffracted.
- 10 2 An optical device as claimed in claim 1, wherein the radiation beam comprises at least
a first and a second direction perpendicular to the central axis, the radiation beam having a
first intensity distribution with a first mean intensity in the first direction and a second
intensity distribution with a second mean intensity in the second direction, said second mean
intensity being greater than the first mean intensity, wherein the optical component is
15 designed for diffracting the radiation beam in the second direction more strongly than in the
first direction.
- 3 An optical device as claimed in claim 1, wherein the optical component has a phase
structure with a phase depth which decreases from the central axis to the outer envelope of
the radiation beam.
- 20 4 An optical device as claimed in claim 1, wherein the optical component has a phase
structure with a duty cycle which decreases from the central axis to the outer envelope of the
radiation beam.
- 5 An optical device as claimed in claim 1, wherein the optical component has a phase
structure with a diffraction profile which can be changed in accordance with a mode of
25 operation of the optical device.
- 6 An optical device as claimed in claim 1, wherein the optical component has a periodic
phase structure.
- 7 A method of writing to and reading from an information carrier with an optical device
comprising a radiation source for producing a radiation beam and means for focusing the
30 radiation beam on the information carrier along an optical path, said radiation beam having a
central axis and an outer envelope, said radiation beam having an intensity distribution, said
method comprising the steps of :

- providing in the optical path, during writing, an optical component designed for increasing the ratio between the intensity near the envelope and the intensity near the central axis in that a first percentage of the beam near the central axis is diffracted;

- changing the diffraction profile of said optical component during reading, such that said
5 optical component diffracts a second percentage of the intensity of the beam near the central axis, the second percentage being larger than the first percentage.

8 An optical component comprising a phase structure having a variable phase depth.

9 An optical component comprising a phase structure having a variable duty cycle.

10 An optical component as claimed in claim 8 or 9, wherein the phase structure is
periodic.